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FOX RIVER CURRENT

Update from the Lower Fox River Intergovernmental Partnership

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Health Reports Make Strong Case For PCB Hazards

By Mary Young, Wisconsin Department of Health and Family Services

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About this newsletter

People may come in contact with polychlorinated biphenyls (PCB's) in air, water and food. Eating contaminated fish is the most hazardous exposure route because PCB's are concentrated in the fat tissue of fish. Women who eat a lot of PCB-contaminated fish before becoming pregnant or during pregnancy will expose their unborn children to higher levels of PCB's. When children are exposed to PCB's, they can develop problems learning, remembering, growing and behaving properly. Additionally, adults who have eaten a lot of PCB-contaminated fish in their lifetime may have an increased risk of cancer.

Some people say there is not enough information to tell if PCB's really cause illness. However, most scientists agree that the total amount of evidence from studies is strong. In December 1998, the assistant administrators for the U.S. Environmental Protection Agency (EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR) expressed in a letter to health care professionals their concerns about human exposure to PCB's through fish consumption. They pointed out that health studies show PCB's:

1. may disrupt women's reproductive functions,
2. cause behavioral and developmental problems in newborns that continue through their school years,
3. are associated with liver disease, diabetes, thyroid problems and immune problems, and
4. increase a person's cancer risk.

ATSDR recently compiled study evidence in a single paper, "Public Health Implications of Persistent Toxic Substances in the Great lakes and St. Lawrence Basins," for the Journal of Great Lakes Research. The authors listed the following human studies associating PCB exposure with an increase in health problems:

Year	Location and Findings	Investigator
1984,1988	St. Lawrence Lakes: Children born to mothers who ate a lot of contaminated fish had more infections.	Smith 84,Humphrey 88
1989	New York: Women who worked with PCB's had shorter pregnancies and smaller babies. Their developing babies did not grow properly.	Taylor
1985	Michigan: Women who ate a lot of contaminated fish had shorter pregnancy periods and smaller babies.	Jacobson
1984, 1985, 1990	Michigan: Women who ate contaminated fish for 6 years before and during pregnancy had children with development problems and learning problems. The children's problems lasted for years after their birth. As babies they startled easily, had poorer reflexes and coordination, had trouble recognizing objects by sight and had poorer short-term memory.	Jacobson
1991	North Carolina: Babies who drank PCB-contaminated breast milk had more nervous system problems.	Rogan & Gladen
1991	Michigan: This repeat of the above Jacobson study using strict controls showed a relation to developmental and learning problems.	Swain
1995	Yu-Cheng: Children born to mothers who ate a lot of contaminated fish had delayed development, behavior problems and smaller penises.	
1995	Holland: When babies drank breast milk from mothers who ate contaminated fish, the babies were slower to respond to stimulation.	

1996	Michigan: Mental development problems lasted to age 11 (in 212 children). The children with highest exposure were 3 times more likely to have lower average IQ, were 2 times more likely to be 2 years behind in reading, had poorer short-and long-term memory and had difficulty paying attention.	Jacobson
1996	Ontario: 559 babies born of women who ate a lot of contaminated fish showed greater number of abnormal reflexes, less mature automatic responses, and were less attentive to sight and sound stimulation.	
1997	St. Lawrence Lakes: lower reflexes, poorer memories and attention, greater confusion.	Mergler
1997	New York: Women who regularly ate contaminated fish had shorter menstrual cycles.	Mendola
1997	Michigan: In 626 married couples, fish consumption was related to problems getting pregnant after 12 months of trying.	Courval

To determine effects from chemical exposures, scientists often use human studies that look at people who worked with or around chemicals. While such studies are useful, it is still difficult to blame a health effect on one aspect of a person's life. For example, if a person works every day with chromium dust and ends up with chronic bronchitis, it is difficult to pinpoint if the illness is from the chromium where she works, the cigarettes she smokes, the industry down the street from where she lives, or some other unknown exposure.

The same holds true for cancer. According to the American Cancer Society, about 30 percent of Americans now living will eventually develop cancer. Because rates of the disease are so high and causes are so wide-ranging, it is very hard to determine which cancers result from chemical exposures.

Because it is much easier to control the various aspects of an animal's life than a human's, health professionals often rely on animal studies to determine what health effects may result in humans exposed to hazardous chemicals. When animal studies repeatedly show illness or cancer results, these

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professionals recommend that people reduce or eliminate contact with the chemicals in question. The following are a few studies that showed animal illness after exposure to PCB's:

Year	Animal and Findings	Investigator
1996	Rats: Liver tumors in female rats and thyroid tumors in male rats.	Brunner
1996	Monkeys: Fed mixtures that approximate women's breast milk; had difficulty learning complex tasks.	Rice
1995, 1996	Seals: Fed contaminated herring; had reduced immune cells.	Arnold 95, Typhonas 95, Ross 96

These are only a few of the studies that show a relationship between PCB exposure and negative health effects. Health professionals will continue to review new studies like the recent cancer study by the General Electric Company in New York. However, the public cannot wait until all of the evidence is in before it receives recommendations on health protection. For that reason, the Wisconsin Division of Public Health recommends that people:

1. continue to eat fish,
2. follow the Wisconsin sport-fish consumption advisory,
3. properly clean and prepare fish, and
4. continue to fish and enjoy the outdoors.

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Fox Valley Citizens, Officials Express Concerns

By Susan Pastor, U.S. Environmental Protection Agency

Community concerns are always a priority for U.S. Environmental Protection Agency (EPA) projects, and the Lower Fox River is no different.

From December 1998 through February 1999, EPA community involvement coordinators led nearly four weeks of interviews in several communities concerned about the Fox River. People from Sturgeon Bay to Neenah representing more than 100 households, environmental groups, municipalities and businesses volunteered to discuss their concerns and informational needs.

When seeking candidates to be interviewed, EPA first contacted people whose names appeared on sign-in sheets from public meetings. Many of them were members of groups or officials elected to public office. Those people were interviewed in December. To try to locate citizens not affiliated with a particular organization or governmental body, EPA sent cards to about 500 Fox Valley residents on the mailing list inviting them to schedule January or February interviews. The response was overwhelming. More than 100 cards, phone calls and E-mail messages were received. EPA contacted several people for interviews based on those responses.

No matter where they lived, everyone was concerned about the Fox River. Particular interests included how the river should be cleaned up, if the river needs to be cleaned up, how much a cleanup could cost, and who should pay for a cleanup. Opinions were split as to whether the project should be placed on EPA's National Priorities List (NPL), the reputation of the partner agencies, and the credibility of the paper companies.

Most of those interviewed thought the local media was adequately covering news on the Fox River. In addition, the majority said written materials distributed by the partner agencies met their needs for frequent, easy-to-understand information. Many people found the public meetings and small-group discussions useful for asking questions, receiving information, and providing input. Almost everyone agreed that the National Oceanic Atmospheric Administration (NOAA), a partner agency and natural resource trustee, needed to provide more information on its role.

There was often an interesting "crossover" in opinions and concerns. While EPA believed that backing for the NPL and a paper-company-funded cleanup mainly existed in the Green Bay area, interviews revealed that many people in the Appleton area shared those feelings. EPA had also assumed that citizens in the Appleton area were primarily concerned about negative economic impacts potentially caused by NPL designation or an expensive cleanup. However, people in the Green Bay area had similar concerns.

Input provided will be compiled and included in a document called a Community Involvement Plan (CIP). A CIP is a public document that summarizes community concerns and is typically completed for all NPL sites and non-NPL projects. It can also be revised to reflect changes in the public’s concerns or informational preferences. The Lower Fox River CIP will be completed this spring and placed in the information repositories at local libraries.

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FWS Releases Report On Bird Injuries From PCB's

By Dave Allen, U.S. Fish and Wildlife Service, Green Bay Ecological Services Office

The U.S. Fish and Wildlife Service (FWS) recently released its bird-injury report as part of the Fox River and Green Bay Natural Resource Damage Assessment (NRDA) currently being performed by the federal government and the Oneida and Menominee tribes.

The bird-injury report is available for review by appointment at the FWS Reading Room, 1015 Challenger Court in Green Bay, or on the Internet at http://www.fws.gov/r3pao/nrda/bird.pdf. Call Joe Moniot at (920) 465-7408 to schedule an appointment.

FWS hosted a public meeting in Green Bay in May to discuss how polychlorinated biphenyls (PCB's) from the Fox River are injuring birds in the Green Bay system and to receive public feedback on the report.

PCB exposure causes bird deformities like the crossed bill in this cormorant.

The detailed report covers how PCB's harm birds, why Green Bay is important to birds and vice versa, and the vast amount of data collected that shows the levels of PCB's accumulated by birds living near Green Bay.

The report compares the amount of PCB's found in birds near Green Bay to toxic levels, and details how and where birds are exposed. It also explains how data on bird injuries will be used in the NRDA to make legal determinations and how the report relates to the ecological risk assessment conducted by the U.S. Environmental Protection Agency (EPA).

The report's results are important in understanding why the government and tribes are working toward cleaning and restoring the Fox River and Green Bay. In combination, the NRDA, Superfund and the state/company agreement provide the incentive and means to clean and restore the Fox River and Green Bay.

The report is available to the public to help build awareness that problems caused by local PCB's can affect birds over thousands of square miles and for decades. FWS encourages help from the public to fix the problem in the best way possible.

FWS will release all Fox River and Green Bay NRDA determinations this year. Other reports will cover: how PCB's are released and further spread into the ecosystem; fish injuries; economic damages; and restoration projects. The reports will be available for review on the Internet. For a listing of current reports and other information, visit the FWS Web site.

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Superfund Examples In Wisconsin

By Susan Pastor, U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been active in Wisconsin since the mid-1980s, when the Superfund program was still relatively new -- and a lot has happened since then.

Since 1986, EPA has responded to approximately 14 emergency removals of contaminated soil, buried drums, etc. Of the 39 National Priorities List (NPL) sites in the state, 24 sites have been cleaned up or have completed design of a final cleanup. Three of those are in northeastern Wisconsin: Lemberger Transport and Recycling, Lemberger Landfill in Manitowoc County and the Algoma Municipal Landfill in Kewaunee County.

Similar to the Lower Fox River project, the Lemberger sites involved seven potentially responsible parties (six companies and one municipality), which formed the Lemberger Sites Remediation Group (LSRG) in early 1992. The LSRG funded a ground-water treatment system at the landfill site and landfill caps on both sites. The $35-$45 million project took about six years to complete once the decision on how to clean up contaminated ground water was finalized.

According to Doug Clark, common counsel and chair of the LSRG technical committee, the group worked well together. "This was a unique group of big players who were smart enough to realize that fighting would be counterproductive," he said. "The fear was ‘if I don’t settle, what am I going to be facing?’"

Former EPA Project Manager Pablo Valentin agreed. "They were very cooperative," he said. "It was just a matter of coming up with solutions that were acceptable to everyone."

In September 1997, the LSRG, EPA, and Wisconsin Department of Natural Resources (DNR) sponsored an open house to showcase the treatment plant and landfill caps. Approximately 50 local residents, elected officials and members of the media toured the sites. EPA and DNR staff served as "tour guides" along with the LSRG’s contractor.

Clark, who has been involved with the Lemberger sites since 1988, said the group was fairly

pleased with the outcome. "The members were as happy as you can be with Superfund," he concluded. "Basically, everyone thinks we're doing the right thing."

The Lemberger Landfill was operated as an open dump from about 1954 to 1983. The adjacent 16-acre Lemberger Transport and Recycling site was an unlined landfill that accepted industrial waste from 1970 to 1976.

Former EPA Region 5 Project Manager, Pablo Valentin, checks on monitoring wells at the Lemberger Transport and Recycling Site in Manitowoc County. The Lemberger sites are an example where potentially responsible parties worked together to successfully fund and complete a cleanup.

Another local example is the Algoma Municipal Landfill. EPA and DNR worked with eight companies and the City of Algoma to fund and design the $1.3 million cleanup. The decision to install a clay cover, a gas extraction system, fences and a ground-water monitoring system at the 15-acre site was made in September 1990. About a year later, an agreement was reached with the companies and the city. They designed the cleanup project and construction began in August 1993. By February 1994, construction was completed. The 7-acre Algoma Municipal Landfill operated as a municipal and industrial waste landfill from 1969 to 1983. Potential ground-water contamination existed due to the presence of hazardous chemicals.

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Profile On...

Henry Anderson

State medical officer has studied health risks from chlorinated chemicals for decades.

By Mary Young, Wisconsin Department of Health and Family Services

Dr. Henry A. Anderson

Dr. Henry A. Anderson is the state's chief medical officer and state epidemiologist for occupational and environmental medicine. He consults with staff members in the Division of Public Health at Department of Health and Family Services (DHFS) as they determine the risks posed by contaminated sediments in the Fox River.

Anderson grew up in Wisconsin and feels a strong commitment to the state. "Wisconsin citizens have always been concerned about the environment," he said. "It's a great place for people who are observant and concerned about environmental public health and doing the right thing."

Anderson grew up in Stevens Point. He received a bachelor's degree in biology from Stanford University, where he also studied marine biology. At the urging of his advisor, Dr. Paul Ehrlich, he pursued a career in medicine at University of Wisconsin-Madison.

While interning in New York City, he met Dr. Irving Selikoff, who had conducted the first studies of asbestos insulators and quantified the link between asbestos and lung cancer. He established one of the premier environmental and occupational epidemiology programs in the world.

Anderson completed his occupational and environmental medicine residency under Selikoff at Mount Sinai's Environmental Science Laboratory and then joined his staff. Prior to coming back to Wisconsin, Anderson led or participated in over 100 environmental or occupational clinical research studies.

Anderson has assisted with the evaluations of health risk from exposure to persistent chlorinated chemicals like polychlorinated biphenyls (PCB's) since the 1970s. While at Mount Sinai, he was part of a clinical team that studied workers at a PCB capacitor factory in upstate New York. He led statewide studies in Michigan investigating the health impacts that occurred after a feed-supplement company accidentally contaminated cattle feed with polybrominated biphenyl (PBB), a fire retardant with properties very similar to PCB's. In Wisconsin, he has studied sport-fish consumption as an exposure pathway for PCB's, dioxin and pesticides.

Anderson says that he finds great personal satisfaction working for a state agency. As in an academic setting, he is able to do research that helps to identify exposure pathways and understand human consequences. But unlike an academic setting, Anderson can take research results and see that policies and regulations are developed and implemented that will reduce a population's exposure to harmful chemicals.

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For More Information

Information available at local libraries

Information repositories, containing technical reports, summary fact sheets, and other information, are set up in the reference section at the following local libraries. Information repositories at public libraries in Menasha and Kimberly have been discontinued.

Appleton Public Library
225 N. Oneida St.
Appleton
920-832-6170

Brown County Library
515 Pine St.
Green Bay
920-448-4381, ext. 394

DePere Public Library
380 Main Ave.
DePere
920-448-4407

Door County Library
104 S. Fourth Ave.
Sturgeon Bay
920-743-6578

Kaukauna Public Library
111 Main Ave.
Kaukauna
920-766-6340

Little Chute Public Library
625 Grand Ave.
Little Chute
920-788-7825

Neenah Public Library
240 E. Wisconsin Ave.
Neenah
920-751-4722

Oneida Community Library
201 Elm St.
Oneida
920-869-2210

Oshkosh Public Library
106 Washington Ave.
Oshkosh
920-236-5200

Wrightstown Public Library
529 Main St.
Wrightstown
920-532-4011

Check out these Web sites:

http://www.dnr.state.wi.us/org/water/wm/lowerfox

http://www.epa.gov/region5/foxriver/

http://www.fws.gov/r9dec/nrdar/nrdamain.html

http://www.fws.gov/r3pao/nrda/

Disclaimer: The opinions expressed in these articles are solely those of the authors and are not necessarily shared by all members of the Fox River Intergovernmental Partnership.

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